CLAIMS

What is claimed is:

1.   A method of equalizing the signal to interference ratios (SIRs) of a plurality of physical channels, each physical channel having a first transmission power level, the method comprising:

determining the SIR for each of said plurality of physical channels;

determining a first average SIR based upon the SIRs for said plurality of physical channels; and

calculating a new transmission power level for each of said plurality of physical channels; whereby said calculation of said new transmission power levels comprises:

ensuring the new SIRs of said plurality of physical channels are equal to each other; and

ensuring the new average SIR for said plurality of physical channels is substantially the same as said first average SIR.

2.   The method of claim 1, wherein said first average is a linear weighted average.

3.   The method of claim 1, wherein said first average is a logarithmically weighted average.

4.   A method of equalizing the signal to interference ratios (SIRs) of a plurality (i) of physical channels, each physical channel having a first power level P_i, the method comprising:

determining a first average SIR for said plurality (i) of physical channels;

for each of said plurality (i) of physical channels:

determining the current transmission power level P_i;

determining the current interference level I_i; and

-14-

determining the spreading factor G_i; and

for each of said plurality (i) of physical channels:

calculating a new transmission power level P_i'; whereby the new transmission power levels satisfy two conditions: 1) the new SIRs of said plurality of physical channels are equal to each other; and 2) the new average SIR for said plurality of physical channels is substantially the same as said first average SIR.

5.   The method of claim 4, further including applying said new transmission power levels P_i to said plurality (i) of physical channels.

6.   The method of claim 4, wherein said calculation step further includes determining the ratio between the transmission power P_i of a physical channel and its interference level I_i.

7.   The method of claim 6 wherein said calculation step further includes summing said ratios for all of said plurality (i) physical channels to provide a first sum.

8.   The method of claim 7 wherein said calculation step further includes summing the inverse of the spreading factors for all of said plurality (i) of physical channels to provide a second sum.

9.   The method of claim 8 wherein said calculation step further includes dividing said first sum by said second sum.

10.   A communications unit for communicating on a plurality of physical channels, each physical channel having a first transmission power level, said unit comprising:

a signal processor for transmitting a plurality of signals on said plurality of physical channels; and

a circuit for controlling the power of each of said physical channels; whereby said circuit equalizes the signal to interference ratios (SIRs) of said plurality of physical channels by:

determining the SIR for each of said plurality of physical channels;

determining a first average SIR based upon said SIR for said plurality of physical channels; and

calculating a new transmission power level for each of said plurality of physical channels; whereby said calculation of said new transmission power levels comprises:

ensuring the new SIRs of said plurality of physical channels are equal to each other; and

ensuring the new average SIR for said plurality of physical channels is substantially the same as said first average SIR.